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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/309,157	05/10/1999	STEVEN L. WRIGHT	P02477US2(04	7159

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 04/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/309,157

Applicant(s)
Wright et al.

Examiner
Michael P. Stafira

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment b, filed 2/4/2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 21, 29-34, and 39 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 21, 29-34, and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claim 31 is objected to because of the following informalities: Claim 31 depends from canceled claim 26, therefore examiner is going to assume it depends on claim 21 for examination purposes. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 21, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayes ('526) in view of Kemeny et al. ('963).

Claim 1

Mayes ('526) discloses a light source (10) capable of producing a near infrared radiation in a controllable direction to a substance location (13) (See Fig. 1).

The reference of Mayes ('526) further discloses a sensor (11) oriented towards the substance location and capable of sensing near infrared radiation reflected from the substance location (See Fig. 1).

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Mayes ('526) further discloses a housing (11) including a monochromator having no moving optical components and capable of isolating narrow portions of the near infrared spectrum and a detector (52) positioned to detect and quantify one isolated narrow portions of the near infrared spectrum created (Col. 2, lines 53-60). It is obvious to one skilled in the art to know that the sensor of Mayes ('526) produces the same type of information as a monochromator by isolating the wavelengths with a photodetector array as disclosed in Col. 2, lines 53-60 and Col. 6, lines 6, lines 27-47).

The reference of Mayes ('526) further discloses a communication member (28) between the sensor (11) and the monochromator (30) to transfer the sensed near infrared radiation to the monochromator (See Fig. 1).

Mayes ('526) further discloses a processor (34) operatively connected to the monochromator for determining the amount of constituents in the substance based on the detected near infrared spectrum (Col. 4, lines 46-58).

Mayes ('526) teaches the claimed invention of the substance (13) being movable relative to the housing (11).

Mayes ('526) substantially teaches the claimed invention except that it does not show the monochromator being selected from the group consisting of a stationary interferometer, a stationary Hadamard mask, an acoustic-optic tunable filter (AOTF), and an electro-optic modulator. Kemeny et al. ('963) shows that it is known to use a acoustic-optic tunable filter (AOTF) (See Abstract) for obtaining rapid wavelength change. It would have been obvious to

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combine the device of Mayes ('526) with the AOTF of Kemeny et al. ('963) for the purpose of providing the improvement of making the apparatus more efficient, stable, and mechanically less complicated.

Claim 21

Mayes ('526) discloses irradiating the substance (13) with near infrared radiation (Col. 3, lines 41-49)(See Fig. 1).

The reference of Mayes ('526) further discloses a sensor (11) for sensing near infrared radiation reflected from substance location (Col. 4, lines 26-35) (See Fig. 1).

Mayes ('526) further discloses isolating the sensed radiation into one narrow portions of the spectrum (Col. 2, lines 53-60).

Mayes ('526) further discloses analyzing one narrow portion and determining the amount of constituents in the substance (Col. 2, lines 53-60).

Mayes ('526) substantially teaches the claimed invention except that it does not show the monochromator being selected from the group consisting of a stationary interferometer, a stationary Hadamard mask, an acoustic-optic tunable filter (AOTF), and an electro-optic modulator. Kemeny et al. ('963) shows that it is known to use a acoustic-optic tunable filter (AOTF) (See Abstract) for obtaining rapid wavelength change. It would have been obvious to combine the device of Mayes ('526) with the AOTF of Kemeny et al. ('963) for the purpose of providing the improvement of making the apparatus more efficient, stable, and mechanically less complicated.

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Claims 29-32

Mayes ('526) discloses the claimed invention except for utilizing the constituents for agricultural hybrid development, breeding programs, soil analysis, or non-destructive analysis of nutraceuticals. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine Mayes ('526) with one of these analysis systems since it was well known in the art that the analysis would provide better information for harvesting.

4. Claims 33,34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayes ('526) in view of Funk et al. ('040).

Claim 33

Mayes ('526) discloses a method of irradiating the substance (13) with near infrared light (Col. 3, lines 41-49)(See Fig. 1).

Mayes ('526) substantially teaches the claimed invention except that it does not show a method of a sensor, sensing near infrared light that is reflected off the substance while moving the sensor relative to the substance. Funk et al. ('040) shows that it is known to provide a method of moving a sensor (See Fig. 2) relative to the substance and sense near infrared light reflected from the substance (See Fig. 1) (Col. 4, lines 17-24) for a increased mobility of an apparatus. It would have been obvious to combine the method of Mayes ('526) with the moving of the sensor relative to the substance of Funk et al. ('040) for the purpose of providing mobility to the apparatus in large fields to be measured.

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Mayes ('526) further discloses isolating the sensed radiation into one narrow portions of the spectrum (Col. 2, lines 45-60).

Mayes ('526) further discloses analyzing in real time one narrow portion and determining the amount of constituents in the substance (Col. 2, lines 45-60; Col. 7, lines 3-13)

Claim 34

Mayes ('526) substantially teaches the claimed invention except that it does not show carrying a source for NIR, the sensor and devices to isolate the analyze the sensed radiation on a mobile carrier, which can be moved past the substance . Funk et al. ('040) shows that it is known to carry a source and sensor system moved past a substance (See Fig. 1) for a increased mobility of an apparatus. It would have been obvious to combine the device of Mayes ('526) with the mobile carrier of Funk et al. ('040) for the purpose of providing real-time measurements of large area amounts of substance.

5. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mayes ('526) in view of Kemeny et al. ('963).

Claim 39

Mayes ('526) discloses a light source (10) capable of producing a near infrared radiation in a controllable direction to a substance location (13)(See Summary of Invention) (See Fig. 1).

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The reference of Mayes ('526) further discloses a sensor (11) oriented towards the substance location and capable of sensing near infrared radiation reflected from substance location. (Col. 4, lines 26-35) (See Fig. 1).

Mayes ('526) discloses a monochromator having no moving optical components (See Fig. 1) and capable of isolating narrow portions of the near infrared spectrum (Col. 2, lines 45-60) and a detector (52) positioned to detect and quantify one isolated narrow portions of the near infrared spectrum created (See Fig. 1; Col. 2, lines 45-60). It is obvious to one skilled in the art to know that the sensor of Mayes ('526) produces the same type of information as a monochromator by isolating the wavelengths with a photodetector array as disclosed in Col. 2, lines 45-60).

Mayes ('526) substantially teaches the claimed invention except that it does not show the monochromator being selected from the group consisting of a stationary interferometer, a stationary Hadamard mask, an acoustic-optic tunable filter (AOTF), and an electro-optic modulator. Kemeny et al. ('963) shows that it is known to use a acoustic-optic tunable filter (AOTF) (See Abstract) for obtaining rapid wavelength change. It would have been obvious to combine the device of Mayes ('526) with the AOTF of Kemeny et al. ('963) for the purpose of providing the improvement of making the apparatus more efficient, stable, and mechanically less complicated.

The reference of Mayes ('526) further discloses a communication member (28) between the sensor (11) and the monochromator (30) to transfer the sensed near infrared radiation to the monochromator (See Fig. 1).

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Mayes ('526) further discloses a processor (34) operatively connected to the monochromator for determining the amount of constituents in the substance based on the detected and quantified one or more isolated narrow portions of the infrared spectrum (Col. 2, lines 45-60; Col. 7, lines 3-42).

Response to Arguments

6. Applicant's arguments with respect to claims 1,21,29-34,39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. If the applicant wishes to send a Fax dealing with either a proposed amendment or for discussion for a phone interview, then the Fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

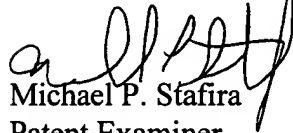
Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is:

(703) 308-7722

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Examiner Michael P. Stafira* whose telephone number is (703) 308-4837.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Michael P. Stafira
Patent Examiner
Art Unit 2877

April 9, 2002/mps